* SWBAT solve problems for free fall objects

Sep 6-2:31 PM

SECA Physics
Tuesday 15 October 2013

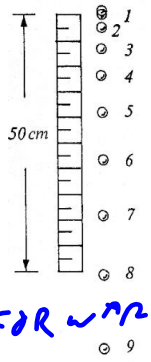
Welcome!!!

Centering...

H. Leslie Grebe

See Leslie to schedule make-up test...

* Pick up:
  - slip of paper (for later)



Opening Question:

What kinds of "direction" could velocity have?

N, S, E, W UP/DN L & R BACK/FORWARD

Do you think acceleration is a vector or not?

$a = \frac{\Delta v}{\Delta t}$ YES!

Sep 7-7:04 AM

Catchy Physics Phrases: Speed, Velocity, Acceleration

Speed is
Change in distance over change in time

$$\text{SPEED} = \frac{\Delta d}{\Delta t}$$

Velocity is
Speed with direction

Acceleration is
Change in velocity over change in time

$$a = \frac{\Delta v}{\Delta t}$$

Oct 4-7:27 AM

Of falling books and feathers...

- Make a prediction with brief explanation
- Make an observation

SPREAD OUT WASHERS
MADE AN EVEN SOUND ON PAN
LONGER OR FARTHER SOMETHING FALLS, THE MORE DISTANCE IT COVERS PER SECOND

MORE MASS / WEIGHT HEAVIER

Book and Feather (boring): LIGHT SHAPE

HEAVY LIGHT SAME SHAPE/SIZE

Golf ball and ping pong ball:

SAME

SAME HEAVY → ! AIR RESISTANCE

2 Kleenex:

So, how could we get book and feather to fall the same???

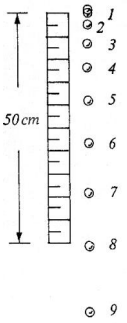
Terminal Velocity

Oct 5-7:33 AM

Gravity causes acceleration!

$a = \frac{\Delta v}{\Delta t}$

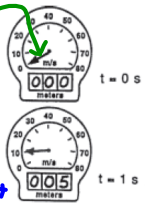
On earth, the acceleration is "g" = 10 m/s² down
"g" is the acceleration due to gravity
=> every second it speeds things up 10m/s



Rearranging the formula we get:

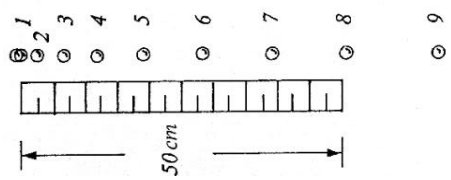
$t \cdot g = \frac{v}{t} \cdot t$

$v = g \cdot t$



And for distance it's:

$d = \frac{1}{2} g t^2$



Oct 5-8:33 AM

Reaction Board

Pick one:

- I learned...
- I wonder...
- I wish...
- I was surprised by...

Oct 15-7:38 AM

Daily 3 Questions

* Every day except test/project days
* 3 Questions on the topics of the day
* Main source of daily points
* I am happy to give credit when I have no concerns about someone giving or getting help with the answers.

You can't get your points if you don't have your NAME!!!

Name	Period
1.	
2.	
3.	

Sep 9-7:32 AM

1. "g" is the acceleration due to gravity. It means that for every second that passes, an object in free fall gains 10 meters per second of speed.

2. If a greyhound travels 160 meters in 10 seconds, what is its speed?

16 m/s

3. How far has an object fallen after the first 2 seconds?

$t = 2\ s$

$d = \frac{1}{2}(10\ m/s^2)(2\ s^2) = 20\ m$

Oct 8-6:48 AM